

(12) UK Patent Application (19) GB (11) 2 102 072 A

(21) Application No 8113683
(22) Date of filing 5 May 1981
(43) Application published
26 Jan 1983

(51) INT CL³
F04C 18/344 29/00
(52) Domestic classification
F1F 1A4D AX
F4H G2T
U1S 1966 F1F

(56) Documents cited
GB A 2022808

(58) Field of search
F1F
F1C
F1N
F4H

(71) Applicant
Denco AGR Limited,
(Great Britain),
P.O. Box 11,
Holmer Road,
Hereford,
HR4 9SJ

(72) Inventor
Norman Sidney Blow

(74) Agents
Marks and Clerk,
57—60 Lincoln's Inn
Fields,
London,
WC2A 3LS

(54) Sliding-vane type rotary compressor

(57) The compressor includes a rotor-drive motor that automatically rotates the rotor first in the reverse direction for a short period e.g. one or two

seconds, on starting and thereafter in the forward direction. The compressor may be adapted for use in a refrigerator and the motor may be an electric one. This mode of operation reduces damage to the vanes owing the presence of liquid e.g. oil, in the refrigeration system.

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SPECIFICATION

Vane type rotary compressor

This invention relates to vane type rotary compressors and concerns particularly vane type rotary refrigeration compressors.

With certain vane type rotary refrigeration compressors, it has been found that the vanes can become damaged on, or shortly after, the compressor has been started.

It has now been discovered that such damage can generally be avoided if the compressor is run in the reverse to the normal direction of rotation for a short period immediately before the compressor is started in its normal direction of rotation.

It is presumed that during such initial reverse operation any oil, refrigerant or oil and refrigerant mixture that would otherwise be in, or quickly enter, the compressor and cause damage to the vanes can be readily expelled down the compressor inlet without risk of damaging the vanes because no compression occurs within the compressor when the compressor is run in the reverse direction. Subsequently when the compressor is operated in its normal direction it appears that the compressor can build up sufficient speed to cope with the oil, refrigerant and/or oil and refrigerant mixture before the oil, refrigerant and/or oil and refrigerant mixture is drawn into the compressor.

Hence, according to this invention, a vane type rotary compressor includes a motor drive that is adapted to rotate the compressor in a reverse

direction to the normal direction of rotation for a short period on starting and then to automatically drive the compressor in its normal direction.

Thus it will be understood that such a motor drive may be produced by modifying the starter portion of the normal electrical control section of the electric motors that are commonly used for such compressors.

Thus the invention includes a vane type compressor and electric drive motor having a starter circuit arranged to initially drive the compressor for a short period in a reverse direction to the normal direction of rotation.

It has been found that reverse operation for a period of one or two seconds appears to be sufficient to eliminate start up damage to the vanes in most cases.

Claims (Filed on 5 May 1982)

1. A vane type rotary compressor, which includes a motor drive adapted to rotate the compressor in a reverse direction to the normal direction of rotation for a short period on starting and then to automatically drive the compressor in its normal direction.

2. A vane type rotary compressor as claimed in Claim 1, wherein an electric drive motor has a starter circuit arranged to initially drive the compressor in a reverse direction to the normal direction of rotation for a period of one to two seconds.

3. A vane type rotary compressor according to Claim 1, substantially as herein described.